From: jackson@duke.edu Sent: 8/15/2012 1:58:25 PM

To: "Richard Rupert/R3/USEPA/US" <Rupert.Richard@epamail.epa.gov>

CC:

Subject: Re: HW04

Agreed, but it's also the one sample that shows a clear isotopic reversal - the ethane signature is 6 per mil lighter. That's typically only seen in Marcellus samples (or in other very deep samples, likely even deeper than Marcellus).

Rob

On Aug 15, 2012, at 1:49 PM, Richard Rupert wrote:

right but, it plotted above the "Marcellus Zone" as defined by Cabot in their paper. Could this be the result of oxidation?

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"The commander in the field is always right and the rear echelon is wrong, unless proved otherwise."

Colin Powell

From: Rob Jackson <<u>jackson@duke.edu</u>>
To: Richard Rupert/R3/USEPA/US
Date: 08/15/2012 01:46 PM

Subject: HW04

This sample (HW04) shows the heaviest signal 13C (-24.98). Rob Jackson

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